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PATENT & TRADEMARK OFFICE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Amadeo, Giordano
Application No: 10/684,314
Filed: October 13, 2003
Title: TUNNEL FOR CONDITIONING PRODUCTS. .

Examiner: Joyner, Kevin
Art Unit: 1797
Confirmation No. 3316

# SUPPLEMENTAL DECLARATION OF JEFF MACKAY UNDER 37 C.F.R. §1.132 IN SUPPORT OF PATENTABILITY

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, Jeff Mackay, declare the following facts knowing them to be true of my own knowledge:

1. I am President and founder of Teo, Inc., assignee of the present patent application.

2. I have worked as a machinist/engineer since the early 1980s.

3. In the past, I have experimented with, designed, fabricated and tested various mechanical/electro-mechanical systems, pressure systems, food processing, tooling, test systems packaging and handling systems involving; the application and evaluation of material properties

and performance in various applications, machine automation, microwave application and computer modeling of dependent systems and subsystems of pressurized microwave food sterilization systems. I have worked with industry experts and actively participated in the design and development of pressurized food sterilization systems utilizing microwave energy.

4. I have experience in the field microwave systems, in both military and commercial applications, including direct experience as a technician and engineer for General Dynamics working on various air defense missile systems operating with radar, infrared and ultraviolet spectrum guidance systems. I have technical experience with high vacuum helium leak detection systems, high pressure 6000-9000 psi argon gas systems including their design, build and repair. Further, I have experience in the development of thermal validation technologies including the development of advanced magnetic sensors.

5. Since April 2005, my responsibilities at TEO, Inc. have included overseeing the development and commercialization of microwave food sterilization systems based on my personal inventions and other patents and rights obtained.

6. Presently, I am a named inventor on two pending United States patent applications in the field of pressurized food sterilization systems.

7. A copy of my engineering/technical curriculum vitae is attached.

8. I would consider myself as one skilled in the art of pressurized food sterilization systems, particularly those employing microwave subsystems.

9. I have reviewed the present patent application serial no. 10/684,314. I have also reviewed U.S. Patent No. 4,809,596 naming *Akutsu* as the inventor. Furthermore, I have reviewed the Patent Examiner's most recent *Office Action* dated February 24,2009 issued in connection with patent application serial no. 10/684,314. I disagree with the Patent Examiner conclusions.

10. First, the Patent Examiner states in the Office Action that *Akutsu* discloses a product conditioning unit "having a substantially quadrilateral cross section". In support of this contention, the Examiner refers to Figure 2 of the *Akutus* patent. I disagree with the Examiner's conclusion.

11. From my review of the patent, *Akutsu* provides no explicit statement within the written body of the patent as to the shape of the product tunnel's cross-section. However, my review of Figure 1, as well as the other Figures, of *Akutsu* suggests that the product tunnel has a round cross-section, not quadrilateral. First, Figure 2 is a top plan view of the *Akutsu* tunnel, and it provides no indication and as to the shape of the product tunnel's cross-section. Meanwhile, Figure 1 illustrates the product tunnel having two flanged portals directly under the numerals 130 and 2. The flanged portals as shown in Figure 1 are appropriate for a product tunnel having a round cross-section. Flanged portals are typical when intersecting a rounded surface in order to

create a flat mounting surface. If the surface was flat as in a quadrilateral cross section the depicted flanges would not be present. In my opinion, if the *Akutsu* tunnel had a quadrilateral cross-section, the portals under numerals 130 and 2 would have been drawn differently. Thus, it is my opinion that *Akutsu* discloses a product tunnel having a round cross-section, not a quadrilateral cross-section.

12. It is my understanding that the claims of the present application directed to a product tunnel having a quadrilateral cross-section have been amended to clarify that the microwave sources are *directly* connected to the opposing sidewalls. The direct connection of the microwave sources to the sidewalls is not mere ornamentation which has no mechanical function. Instead, the direct connection of the microwave sources to the opposing sidewalls is extremely important because the specific orientation of the microwave sources impacts the patterns and interactions of the microwave energy. The quadrilateral shape of the microwave exposure area created by the direct connection of the microwave sources to the opposing sidewalls in the system enables us to more accurately predict and adjust the interaction of the sources to achieve the heating patterns we desire. Merely introducing microwave sources from non-opposed, indirect sources, into non-quadrilateral, curved or irregularly shaped exposure areas would produce variable and unpredictable results in our system. The shape of the structure and location of the microwave source entering that structure are relevant and significant to each other.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the U.S. Code and that such willful false statements may jeopardize the validity of the application or any trademark registration issued thereon.

Executed this 29th day of March ___, 2009 at San Diego, California.

By: ______________________
Jeffrey H. Mackay

# Jeffrey Hunter Mackay

**4871 Narragansett Ave.**
**San Diego Ca. 92107**
**(619) 226-2319  (619) 222-4764 fax**

## Profile:

Legal, Technical and Administrative skills unite in this diverse energetic professional. Formal education and hands on experience exemplify cross discipline abilities.

Jeffrey Mackay has held numerous positions in the engineering, technical and manufacturing fields. He has extensive knowledge of computer, electronic, and mechanical systems. He is currently licenced to practice law in the State of California

## Education:

Thomas Jefferson School of Law – San Diego, California
  Juris Doctor – August 1997
    Certificate in International Legal Process – January 1998

University of Redlands – Redlands, California
  Bachelor of Science Business Administration and Management – June 1992
    (ciriculum completed 3.6 gpa, degree pending)

Riverside Community College – Riverside California
  Associate of Science Degree - June 1990

## Special Training:

International Legal Process certificate
Managing for Six Sigma Quality
Statistical Process Control
Process Improvement and Problem Solving
Concurrent Engineering
Radiation Certified - Krypton 85
Vibration Analysis and Balancing
Chuck E. Cheese University - Restaurant management training

## Experience/Accomplishments

### Quality Assurance:

Technical Engineering support for Quality Control management and support staff. Analyze, develop and administrate management procedures for Quality Programs with special emphasis on Military/commercial specification conformance in a manner consistent with Total Quality Management practices. Train support staff in Quality Assurance procedures utilizing classroom, seminar and multimedia methods.

### Technical:

Isolate system failures, repair, calibrate, and maintain a variety of electronic, mechanical, hydraulic and pneumatic systems. Experience with high-pressure gas, high vacuum, laser and radioactive systems. Familiarity with Hybrid microelectronic manufacturing and testing techniques. Preparation of technical memorandums and metrology procedures.

### Information Systems:

Analyze need and integrate microcomputer solutions to business and technical systems. Projects include the design and implementation of: Law office local networks intigrating specialized legal software on multiple systems to a central client database. Quality assurance database to improve accuracy, reduce paperwork, and provide management with ad-hoc reports. Automated inspection with statistical data collection and report capabilities. CAD/CAM integration to CNC manufacturing equipment. Personal computer construction and software configuration.

### Manufacturing Systems:

Ability to design, program, configure and operate any manufacturing equipment.

**Employment History:**

| Employer | Title | Dates of Position |
|---|---|---|
| Teo, Inc. | President | 4/05 to present |

Responsibilities: Extensive experimentation and design of mechanical, material properties and performance in our systems, machine automation, microwave application and computer modeling of all dependent systems and subsystems. Pressure systems design and consultation with industry experts including a contributing author of the ASME pressure vessel code. Extensive interaction, collaboration and consultation with leading experts in the fields food sterilization, food science, microwave systems in both military and commercial application including direct experience as a technician and engineer for General Dynamics working on various air defense missile systems operating with Radar, Infrared and Ultraviolet spectrum guidance systems. Technical experience with high vacuum helium leak detection systems, high pressure 6000-9000 psi argon gas system including design, build and repair. Continued development of thermal validation technologies including development of advanced magnetic sensors.

General Dynamics Quality Engineer 2/89 to 3/91
Responsibilities: Air Defense Systems. Technical Engineering support for Quality Control management and support staff. Analyze, develop and administrate management procedures for Quality Programs with special emphasis on Military specification conformance in a manner consistent with Total Quality Management practices. Liaison duties between test systems design and NATO second source missile manufacturer. Departmental capital budget responsibilities.

General Dynamics Elect/Mech Technician 8/87 to 2/89
Responsibilities: Air Defense Systems. Missile test systems support of all DoD programs. Maintenance and repair of all missile test system. Isolate system failures, repair, calibrate, and maintain a variety of electronic, mechanical, hydraulic and pneumatic systems. Experience with high-pressure gas, high vacuum, laser and radioactive systems. Experience with Hybrid microelectronic manufacturing and testing techniques.

Santa Teresa Golf Club Master Mechanic 3/86 to 4/87
Repair and maintain all golf course equipment. Small Air-cooled engines to diesel tractors. Supervise subordinate mechanic. Maintain supplies, replacement parts and service records for all equipment.

Custom Machine Works Lead Machinist 3/85 to 12/86
Set up and run manual mills, lathes and other related manual machine tools. Setup and supervise apprentice machinists. Program, setup and operate CNC lathe and CNC vertical mill.

Self - Employed Engineer/Machinist 1/84 to 8/87
Design and build prototype machines, test devices and fixtures for computer, military, packaging and food processing companies.

Clients: Convergent Technologies - AT&T and Workslate Divisions
Ayden Systems - Microwave Division
Lykam Design - Prototype packaging and processing equipment
Rockline International - Printing Equipment

Prior employment history is in various machine shops in the Silicon Valley (San Jose) area beginning in 1980 as a highschool junior on work experience programs. Total years machining experience is over seven years and consists if high tech prototype and light production shops. Goal was to program and setup a broad spectrum of leading edge machine tools manufacturing complex parts in exotic materials.

**Special Skills:**
Competent Drafter - Mechanical & CAD (Skilled in ink)
Personal computer systems - Build, configure and repair
Software - CAD/CAM, Autocad/Solidworks, Database, Accounting, Word, Excel Power Point, Front Page and Windows
CNC equipment programming, configuration and operation - Yasnac, Bandit, Fanuc, Mori Seiki, Bendix and Slo-Syn Controls
All manual machine tools and inspection equipment
Welding Equipment - Arc, Gas, Mig and Tig
Foreign Languages - Spanish (fair), French (fair) Current focus on fluency
Hobbies: Auto Racing, Scuba Diving, Skiing, Home Improvement Projects, Classic Car Restoration, Boating and Games of Strategy